

CLAIMS

1. A method for increasing the stability of a food-grade or pharmaceutical-grade liquid comprising mixing the liquid with an amphoteric polymer to thereby infuse the liquid into the amphoteric polymer matrix and form a generally-solid, stabilized product.

2. The method of claim 1, wherein the food-grade or pharmaceutical-grade liquid is selected from the group consisting of extracted oils, herbal extracts, flavors, colors, and volatile chemical components used in the flavor industry.

3. The method of claim 1, wherein the food-grade or pharmaceutical-grade liquid is a natural or synthetic flavoring liquid.

4. The method of claim 1, wherein the food-grade or pharmaceutical-grade liquid is selected from the group consisting of volatile oils, synthetic flavor oils, flavoring aromatics, oleoresins, extracts derived from plants, leaves flowers, fruits and stems, and combinations thereof.

5. The method of claim 1, wherein the food-grade or pharmaceutical-grade liquid is selected from the group consisting of citrus oils, lime and grapefruit oils, and fruit essences.

6. The method of claim 1, wherein the food-grade or pharmaceutical-grade liquid is selected from the group consisting of aldehydes and esters.

7. The method of claim 1, wherein the food-grade or pharmaceutical-grade liquid is selected from the group consisting of benzaldehyde, citral,, neral,, decanal, aldehyde C-9, aldehyde C-12, tolyl aldehyde, 2,6-dimethyloctanol, 2-dodecenal, and

combinations thereof.

8. The method of claim 1, wherein the food-grade or pharmaceutical-grade liquid is selected from the group consisting of mint flavor, diacetyl flavor, mustard flavor, peppermint oil, lemon flavor, cheese flavor, acetaldehyde, onion oil, garlic oil, mustard flavor, smoke flavor, honey flavor, maple flavor, yeast dough flavor, cilantro flavor, tabasco flavor, worcestershire flavor, coffee flavor, and coconut flavor.

9. The method of claim 1, wherein the food-grade or pharmaceutical-grade liquid is selected from the group consisting of paprika, capsicum, black pepper, apsicum, basil, oregano, ginger, clove, curry blend, jalapeno, chipotle chili, cajun blend, cilantro, celery, chili spice, green bell pepper, barbecue blend allspice, and chili ancho oleoresins.

10. The method of claim 1, wherein the food-grade or pharmaceutical-grade liquid is selected from the group consisting of dimethyl sulfide, isobutyl aldehyde, 2-methyl-3-furanthiol, methional, acetaldehyde and sulfural.

11. The method of claim 1, wherein the food-grade or pharmaceutical-grade liquid is included in an amount ranging from about 3 wt.% to about 70 wt.%, based on the total weight of the stabilized product.

12. The method of claim 1, wherein the food-grade or pharmaceutical-grade liquid is included in an amount ranging from about 4 wt.% to about 50 wt.%, based on the total weight of the stabilized product.

13. The method of claim 1, wherein the food-grade or pharmaceutical-grade liquid is included in an amount ranging from about 5 wt.% to about 30 wt.%, based on the total weight of the stabilized product.

14. The method of claim 1, wherein the amphoteric polymer is polyvinylpyrrolidone.

15. The method of claim 1, wherein the amphoteric polymer is included in an amount ranging from about 3 wt.% to about 40 wt.%, based on the total weight of the stabilized product.

16. The method of claim 1, wherein the amphoteric polymer is included in an amount ranging from about 4 wt.% to about 30 wt.%, based on the total weight of the stabilized product.

17. The method of claim 1, wherein the amphoteric polymer is included in an amount ranging from about 5 wt.% to about 20 wt.%, based on the total weight of the stabilized product.

18. The method of claim 1, further comprising mixing an emulsifier with the liquid prior to introduction of the amphoteric polymer.

19. The method of claim 18, wherein the emulsifier is selected from the group consisting of Tween 20, Tween 21, Tween 40, Tween 60, Tween 65, Tween 80, Tween 81, Tween 85 and mixtures thereof.

20. The method of claim 1, further comprising mixing an absorbent with the liquid and amphoteric polymer.

21. The method of claim 20, wherein the absorbent is selected from the group consisting of water-soluble polymers and thickening gums.

22. The method of claim 20, wherein the absorbent is selected from the group consisting of cellulose, cellulose derivatives, cellulose esters and cellulose ester derivatives.

23. The method of claim 20, wherein the absorbent is selected from the group consisting of polyvinyl alcohol, sodium alginate, polyethylene glycol, xanthan gum, tragacanth, guar gum, acacia gum, polyacrylic acid, methylmethacrylate copolymers, carboxyvinyl copolymers, calcium silicate, silicon dioxide and combinations thereof.

24. The method of claim 20, wherein the absorbent is selected from the group consisting of poly(glycolic acid) (PGA), poly(lactic acid) (PLA), polydioxanones, polyoxalates, poly(α -esters), polyanhydrides, polyacetates, polycaprolactones, poly(orthoesters), polyamino acids, polyurethanes, polycarbonates, polyaminocarbonates, polyamides, poly(alkyl cyanoacrylates), stereopolymers of L- and D-lactic acid, copolymers of bis(p-carboxyphenoxy) propane acid and sebacic acid, sebacic acid copolymers, copolymers of caprolactone, poly(lactic acid)/poly(glycolic acid)/polyethyleneglycol copolymers, copolymers of polyurethane and poly(lactic acid), copolymers of polyurethane and poly(lactic acid), copolymers of α -amino acids, copolymers of α -amino acids and caproic acid, copolymers of α -benzyl glutamate and polyethylene glycol, copolymers of succinate and poly(glycols), polyphosphazene, polyhydroxy-alkanoates and mixtures thereof.

25. The method of claim 20, wherein the absorbent is selected from the group consisting of gelatin, vegetable proteins, soybean proteins, cotton seed proteins, peanut proteins, grape seed proteins, whey proteins, whey protein isolates, blood proteins, egg proteins, acrylated proteins, water-soluble polysaccharides, carrageenans, guar gum, agar-agar, xanthan gum, gellan gum, gum arabic, gum ghatti, gum karaya, gum tragacanth, pectin, phthalated gelatin, gelatin succinate, crosslinked gelatin, shellac, water soluble chemical derivatives of starch, and combinations thereof.

26. The method of claim 1, further comprising mixing an inert bulking agent with the liquid and amphoteric polymer.

27. The method of claim 1, further comprising mixing a flowing agent with the liquid and amphoteric polymer.

28. The method of claim 1, wherein the method is performed in the absence of heat.

29. The method of claim 1, wherein the method is performed at room temperature.

30. The method of claim 1, further comprising:
mixing an emulsifier with the liquid prior to introduction of the amphoteric polymer;
mixing an absorbent with the liquid and amphoteric polymer; and
mixing an inert bulking agent with the liquid and amphoteric polymer.

31. The method of claim 30, wherein the amphoteric polymer is polyvinylpyrrolidone.

32. A stabilized generally-solid composition comprising an amphoteric polymer in which is infused a food-grade or pharmaceutical-grade liquid.

33. The composition of claim 32, wherein the food-grade or pharmaceutical-grade liquid is selected from the group consisting of extracted oils, herbal extracts, flavors, colors, and volatile chemical components used in the flavor industry.

34. The composition of claim 32, wherein the food-grade or pharmaceutical-grade liquid is present in an amount ranging from about 3 wt.% to about 70 wt.%, based on the total weight of the composition.

35. The composition of claim 32, wherein the amphoteric polymer is polyvinylpyrrolidone.

36. The composition of claim 32, wherein the amphoteric polymer is present in an amount ranging from about 3 wt.% to about 40 wt.%, based on the total weight of the composition.

37. The composition of claim 32, further comprising an emulsifier.

38. The composition of claim 32, further comprising an absorbent.

39. The composition of claim 32, further comprising an inert bulking agent.

40. The composition of claim 32, further comprising a flowing agent.